

REMARKS

Claims 1–8 and 21–32 are pending in the present application.

Claims 9–20 were canceled solely as a result of the restriction requirement.

Claim 1 was amended to explicitly recite aspects of the claimed method which were inherent in the claim as pending, without narrowing the scope of the claim.

Claims 21–32 were added.

Reconsideration of the claims is respectfully requested.

35 U.S.C. § 103 (Obviousness)

Claims 1–8 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,307,258 to *Crane, Jr. et al* in view of U.S. Patent No. 6,165,818 to *Ichikawa et al*. This rejection is respectfully traversed.

In *ex parte* examination of patent applications, the Patent Office bears the burden of establishing a *prima facie* case of obviousness. MPEP § 2142; *In re Fritch*, 972 F.2d 1260, 1262, 23 U.S.P.Q.2d 1780, 1783 (Fed. Cir. 1992). The initial burden of establishing a *prima facie* basis to deny patentability to a claimed invention is always upon the Patent Office. MPEP § 2142; *In re Oetiker*, 977 F.2d 1443, 1445, 24 U.S.P.Q.2d 1443, 1444 (Fed. Cir. 1992); *In re Piasecki*, 745 F.2d 1468, 1472, 223 U.S.P.Q. 785, 788 (Fed. Cir. 1984). Only when a *prima facie* case of obviousness is established does the burden shift to the applicant to produce evidence of nonobviousness. MPEP § 2142; *In re Oetiker*, 977 F.2d 1443, 1445, 24 U.S.P.Q.2d 1443, 1444

(Fed. Cir. 1992); *In re Rijckaert*, 9 F.3d 1531, 1532, 28 U.S.P.Q.2d 1955, 1956 (Fed. Cir. 1993). If the Patent Office does not produce a *prima facie* case of unpatentability, then without more the applicant is entitled to grant of a patent. *In re Oetiker*, 977 F.2d 1443, 1445, 24 U.S.P.Q.2d 1443, 1444 (Fed. Cir. 1992); *In re Grabiak*, 769 F.2d 729, 733, 226 U.S.P.Q. 870, 873 (Fed. Cir. 1985).

A *prima facie* case of obviousness is established when the teachings of the prior art itself suggest the claimed subject matter to a person of ordinary skill in the art. *In re Bell*, 991 F.2d 781, 783, 26 U.S.P.Q.2d 1529, 1531 (Fed. Cir. 1993). To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed invention and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. MPEP § 2142.

Independent claim 1 recites that an electrostatic discharge protection portion of the lead frame on which the integrated circuit die is mounted and encapsulated is folded around the sides of the encapsulated integrated circuit die, and inherently requires folding of the electrostatic discharge protection portion of the lead frame after the integrated circuit die is mounted on the

lead frame and encapsulated. Such a feature is not shown or suggested by the cited reference. *Crane, Jr. et al* teaches a pre-formed housing 200 having sidewalls 210 and a bottom surface 220 defining a cavity into which integrated circuit die are subsequently mounted and encapsulated.

The Office Action's reliance on *In re Burhans*, 154 F.2d 690 (CCPA 1946) for the proposition that "selection of any order of performing process steps is *prima facie* obvious in the absence of new or unexpected results" is misplaced. Obviousness inquiries, due to their highly fact-specific and fact-intensive nature, have been deemed not to be amenable to *per se* rules such as that relied upon in the Office Action. *In re Ochiai*, 71 F.3d 1565, 1569 (Fed. Cir. 1995). Mere citation of a *per se* rule regarding what constitutes obvious modifications, without identifying a motivation or incentive for the proposed modification, does not establish a *prima facie* case of obviousness.

In addition, the housing 200 in *Crane, Jr. et al* is not a "lead frame" within the ordinary meaning of that term to those skilled in the art. The term "lead frame" refers to a structure, generally stamped from a metallic sheet, typically comprising a die paddle (on which the integrated circuit die is mounted) and lead portions extending outwardly therefrom to project from the packaged integrated circuit after plastic or epoxy encapsulation of the integrated circuit die, die paddle, and part of each lead portion.

Claim 2 recites grounding of the electrostatic discharge protection portion of the lead frame which is folded around the encapsulated integrated circuit die. Such a feature is not

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shown or suggested by the cited references. *Crane, Jr. et al* does not teach or suggest grounding the housing 200. *Ishikawa et al* only teaches conventional formation of a packaged integrated circuit having leads projecting therefrom including one or more ground leads, and does not suggest folding an additional portion of the lead frame around the package for electrostatic discharge protection or grounding that additional portion.

Therefore, the rejection of claims 1–8 under 35 U.S.C. § 103 has been overcome.

AMENDMENTS WITH MARKINGS TO SHOW CHANGES MADE

Claim 1 was amended herein as follows:

- 1 1. (amended) A method of providing electrostatic discharge protection for an integrated circuit,
2 comprising:
 - 3 mounting an integrated circuit die on a lead frame;
 - 4 encapsulating at least part of the integrated circuit die and a portion of the lead frame
 - 5 with a plastic or epoxy material; and
 - 6 folding [a]an unencapsulated portion of the lead frame around sides of the encapsulated
7 integrated circuit die and over or adjacent to a peripheral upper surface of the plastic or epoxy
8 material.

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If any issues arise, or if the Examiner has any suggestions for expediting allowance of this Application, the Applicant respectfully invites the Examiner to contact the undersigned at the telephone number indicated below or at dvenglarik@davismunck.com.

The Commissioner is hereby authorized to charge any additional fees connected with this communication or credit any overpayment to Deposit Account No. 50-0208.

Respectfully submitted,

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